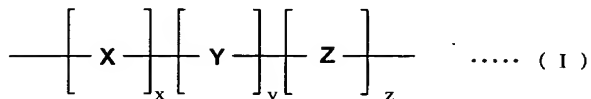


What is claimed is:

1. A polymer electrolyte comprising a sulfonated product of a polymer shown by the following general formula (I):

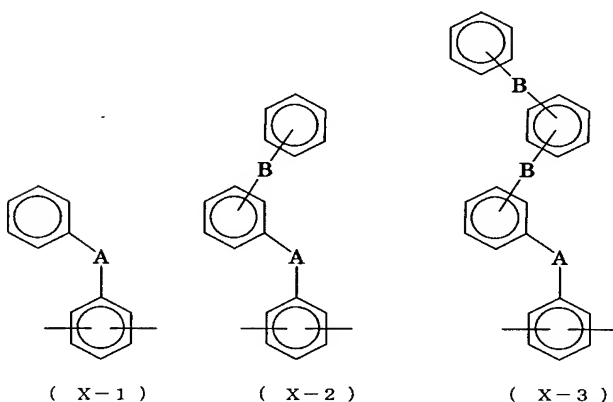
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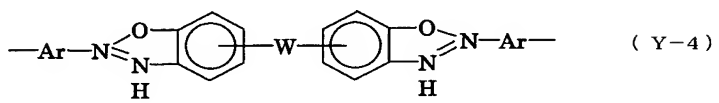
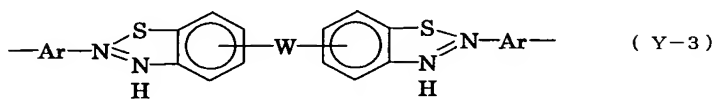
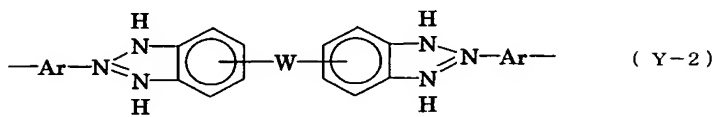
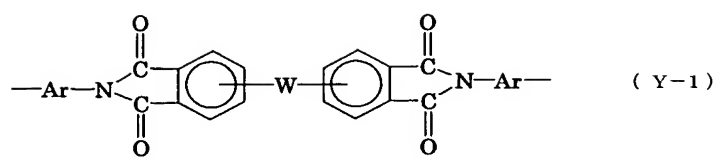
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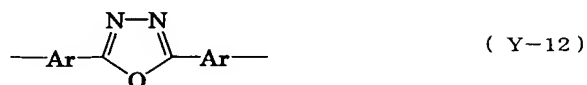
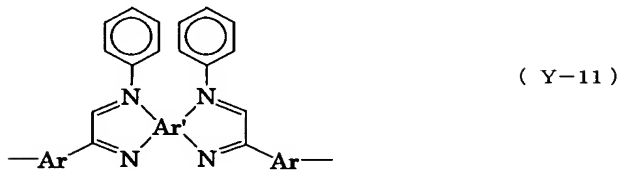
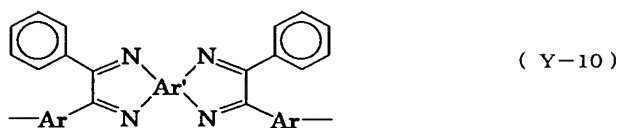
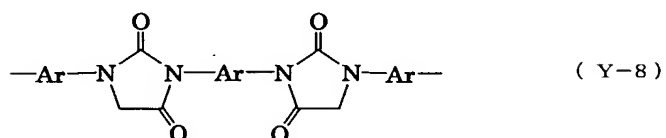
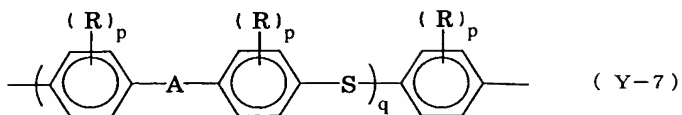
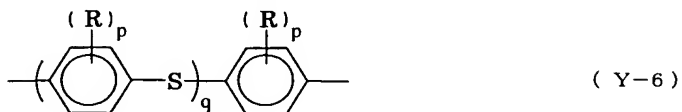
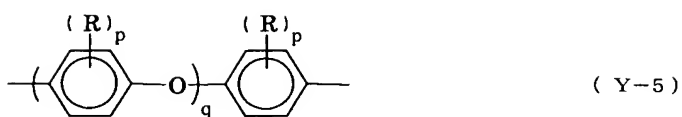
wherein X represents at least one structure selected from structures shown by the following formulas (X-1), (X-2), and (X-3), Y represents at least one structure selected from structures shown by the following formulas (Y-1) to (Y-12), Z represents at least one structure selected from structures shown by the following formulas (Z-1) and (Z-2), X, Y, and Z being bonded randomly, alternately, or in blocks, y represents an integer of two or more, and each of x and z represents an integer of zero or more, where  $x + z > 2$ ,

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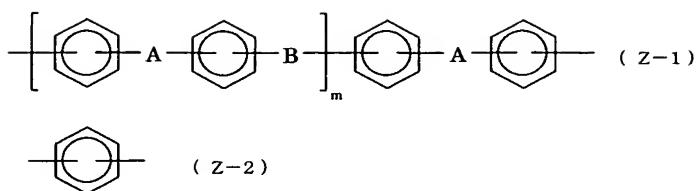


wherein A represents an electron-withdrawing group, and B represents an electron-donating group,





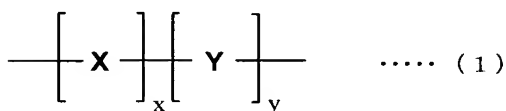
wherein A represents an electron-withdrawing group, Ar represents a divalent group including an aromatic ring, Ar' represents a tetravalent group including an aromatic ring,  
 5 R represents a hydrogen atom or a hydrocarbon group, W represents an electron-withdrawing group or an electron-donating group, p represents an integer of 0 to 4, and q represents an integer of 1 to 1000,



wherein A represents an electron-withdrawing group, B represents an electron-donating group, and m represents an integer of 0 to 200.

5

2. The polymer electrolyte as defined in claim 1, comprising a sulfonated product of a polymer shown by the following general formula (1):

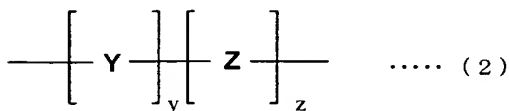


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wherein X represents at least one structure selected from the structures shown by the formulas (X-1), (X-2), and (X-3), Y represents at least one structure selected from the structures shown by the formulas (Y-1) to (Y-12), X and Y being bonded randomly, alternately, or in blocks, and each of x and y represents an integer of two or more.

15

3. The polymer electrolyte as defined in claim 1, comprising a sulfonated product of a polymer shown by the following general formula (2):

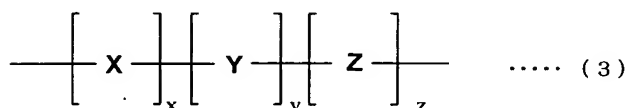


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wherein X represents at least one structure selected from the structures shown by the formulas (Y-1) to (Y-12), Z represents at least one structure selected from the structures

shown by the formulas (Z-1) and (Z-2), Y and Z being bonded randomly, alternately, or in blocks, and each of y and z represents an integer of two or more.

4. The polymer electrolyte as defined in claim 1, comprising a sulfonated  
5 product of a polymer shown by the following general formula (3):



wherein X represents at least one structure selected from the structures shown by the  
10 formulas (X-1), (X-2), and (X-3), Y represents at least one structure selected from the  
structures shown by the formulas (Y-1) to (Y-12), Z represents at least one structure  
selected from the structures shown by the formulas (Z-1) and (Z-2), X, Y, and Z being  
bonded randomly, alternately, or in blocks, and each of x, y, and z represents an integer  
of two or more.

15

5. The polymer electrolyte as defined in claim 1, comprising a sulfonic acid  
group in an amount of 0.5 to 3.0 meq/g.

6. The polymer electrolyte as defined in claim 2, comprising a sulfonic acid  
20 group in an amount of 0.5 to 3.0 meq/g.

7. The polymer electrolyte as defined in claim 3, comprising a sulfonic acid  
group in an amount of 0.5 to 3.0 meq/g.

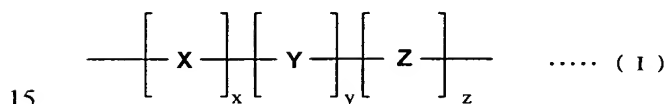
8. The polymer electrolyte as defined in claim 4, comprising a sulfonic acid  
25 group in an amount of 0.5 to 3.0 meq/g.

9. A proton-conducting membrane comprising the polymer electrolyte as defined in claim 1.

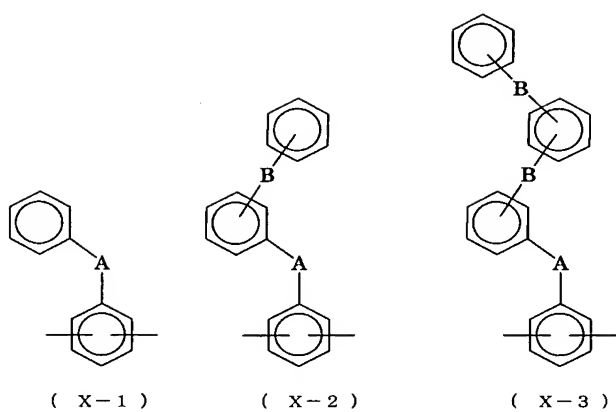
5 10. A proton-conducting membrane comprising the polymer electrolyte as defined in claim 5.

11. A membrane electrode assembly comprising a pair of electrodes and an electrolyte membrane held between the electrodes, the electrodes and the electrolyte  
10 membrane being integrally bonded,

wherein the electrolyte membrane comprises a polymer shown by the following general formula (I):

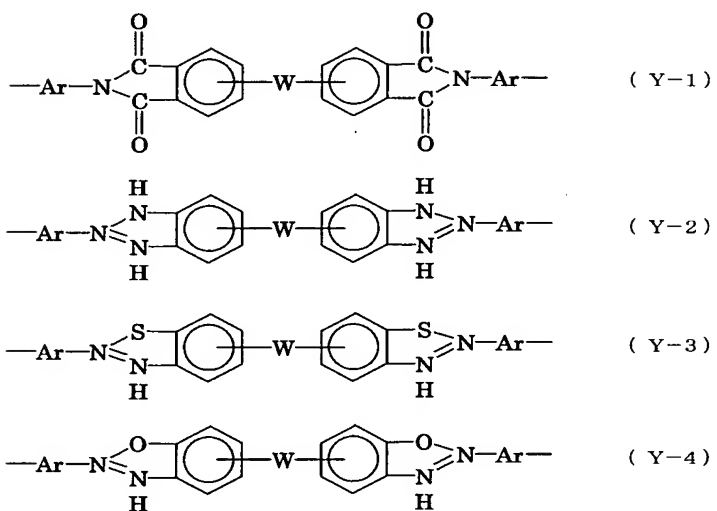


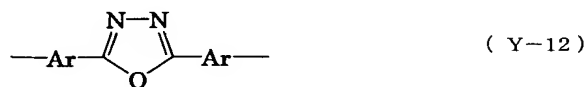
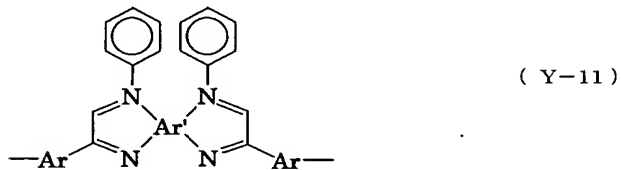
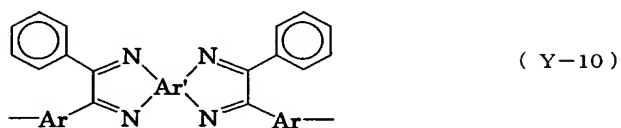
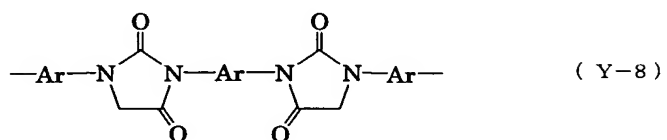
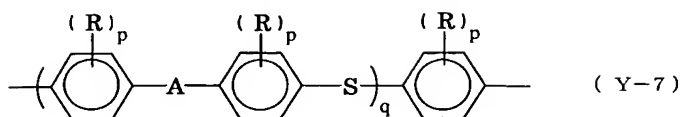
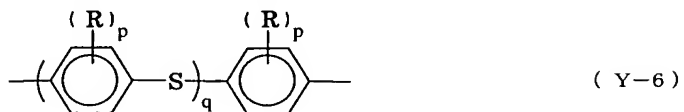
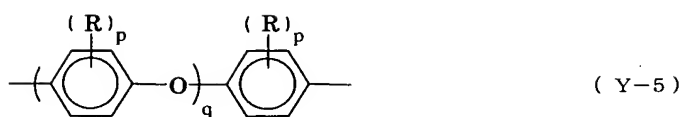
wherein X represents at least one structure selected from structures shown by the following formulas (X-1), (X-2), and (X-3), Y represents at least one structure selected from structures shown by the following formulas (Y-1) to (Y-12), Z represents at least  
20 one structure selected from structures shown by the following formulas (Z-1) and (Z-2), X, Y, and Z being bonded randomly, alternately, or in blocks, y represents an integer of two or more, and each of x and z represents an integer of zero or more, where  $x + z > 2$ ,



wherein A represents an electron-withdrawing group, and B represents an electron-donating group,

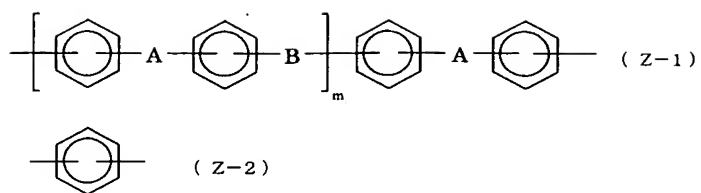
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wherein A represents an electron-withdrawing group, Ar represents a divalent group including an aromatic ring, Ar' represents a tetravalent group including an aromatic ring,  
 5 R represents a hydrogen atom or a hydrocarbon group, W represents an electron-withdrawing group or an electron-donating group, p represents an integer of 0 to 4, and q represents an integer of 1 to 1000,





wherein A represents an electron-withdrawing group, B represents an electron-donating group, and m represents an integer of 0 to 200.